

REMARKS/ARGUMENTS

The present invention teaches a method for improving the stability of the free layer through the introduction of a second pair of stabilizing layers, located either above or below the standard stabilizing layer and magnetizing it in a direction that is antiparallel to that of the first bias layer, thereby magnetostatically canceling out most of the external field of the first bias layer.

Reconsideration is requested of all rejections based on 35 U.S.C. 102 and 103:

For these rejections examiner has relied on Gill (US 6,822,836). In our request for continued examination we argued that that Gill's bias layer overlaps the free layer while our bias layer does not. In his first rejection (following RCE) examiner rejected this argument by asserting that (in his opinion) we had misread the reference.

In responding to this first rejection, we made two arguments: Using Gill's FIG. 5 as an illustration we drew examiner's attention to layer 130 which (a) is required, as part of Gill's invention, to be a magnetic material, (b) is directly connected to Gill's permanent magnet layer 88, and (c) overlaps the free layer. We respectfully reminded examiner that, in conformance with the laws of physics, layers 130 and 88 would behave as a single bias layer structure and that said structure overlapped the free layer as we had previously argued.

In our second argument we pointed out that the bias seen by Gill's free layer also derives from the synthetic antiferromagnetic structure that comprises his layers 134, 138, and 142. Although this structure is not a permanent magnet in the conventional sense, it is functionally indistinguishable from one. For this argument **we did not refer to a specific figure** and note here that layers 134, 138, and 142 all appear in FIG. 3.

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Amdt. dated 08/14/2006

Reply to Office action of 07/20/2006

Examiner dismissed our first argument by stating "Examiner recited Fig. 3 in rejection. Fig. 5 is another embodiment, which is irrelevant to the rejection presented in previous Office action (sic) as well as in this Office action." This is not a valid reason for summarily dismissing our argument since Fig. 5 of Gill differs from his Fig. 3 in only one respect namely that "nonmagnetic Ru layer 138 is now disposed between two CoFe layers 180 and 144..." (see col. 7 lines 57-60). Examiner cannot argue that FIG. 5 is irrelevant unless he can show that it differs from FIG. 3 with respect to the feature under discussion.

Furthermore, Fig. 5 is NOT another embodiment of Gill's invention, being merely the embodiment shown in Fig. 3 but with the composition of layers 134 and 142 being specified. To argue otherwise would be to state that all sub-claims represent different embodiments from their parent claim.

Examiner rebutted our second argument by ignoring it.

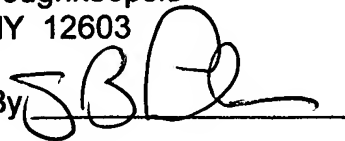
In order to emphasize the foregoing arguments we have amended claims 1, 9, 17, and 25 to explicitly rule out bias structures that comprise more than one magnetic material.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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